

Amendments to the Claims

The current listing of the claims replaces all previous amendments and listings of the claims.

Claim 1 (Currently Amended): An objective lens drive apparatus for use in an optical pickup, comprising:

a magnetic circuit including a magnet magnetized in at least three ~~polarities~~ portions;
and

a coil unit including a focus coil, a tracking coil and a tilt coil,
wherein the focus coil, the tracking coil and the tilt coil are disposed within a magnetic gap of the magnetic circuit.

Claims 2-7 (Canceled)

Claim 8 (Previously Presented): An objective lens drive apparatus according to claim 1, wherein the magnetic circuit includes a plurality of magnets, and the coil unit is disposed within the magnetic gap formed by the magnets.

Claim 9 (Withdrawn): An objective lens drive apparatus according to claim 1, wherein the coil unit includes a plurality of printed circuit boards, and the focus coil, the tracking coil and the tilt coil are separately mounted on the printed circuit boards.

Claim 10 (Withdrawn): An objective lens drive apparatus according to claim 1, wherein the coil unit includes a plurality of first printed circuit boards and second printed

boards, and the focus coil and the tracking coil are mounted on the first printed circuit board and the tilt coil is mounted on the second printed board.

Claim 11 (Withdrawn): An objective lens drive apparatus according to claim 1, wherein the coil unit includes a plurality of first printed circuit boards and second printed boards, and the focus coil and the tilt coil are mounted on the first printed circuit board and the tracking coil is mounted on the second printed board.

Claim 12 (Currently Amended): An objective lens drive apparatus for use in an optical pickup, comprising:

two magnetic circuits each including a magnet magnetized in at least three ~~polarities~~ portions; and

a coil unit including a focus coil, a tracking coil and a tilt coil,
wherein the focus coil, the tracking coil and the tilt coil are disposed within a magnetic gap of one of the magnetic circuits.

Claims 13-18 (Canceled)

Claim 19 (Previously Presented): An objective lens drive apparatus according to claim 12, wherein one of the magnetic circuits includes a plurality of magnets, and the coil unit is disposed within the magnetic gap.

Claim 20 (Previously Presented): An objective lens drive apparatus according to claim 12, wherein the coil unit includes a plurality of printed circuit boards, and the focus coil, the tracking coil and the tilt coil are separately mounted on the printed circuit boards.

Claim 21 (Previously Presented): An objective lens drive apparatus according to claim 12, wherein the coil unit includes a plurality of first printed circuit boards and second printed boards, and the focus coil and the tracking coil are mounted on the first printed circuit board and the tilt coil is mounted on the second printed board.

Claim 22 (Withdrawn): An objective lens drive apparatus according to claim 12, wherein the coil unit includes a plurality of first printed circuit boards and second printed boards, and the focus coil and the tilt coil are mounted on the first printed circuit board and the tracking coil is mounted on the second printed board.

Claim 23 (Original): An objective lens drive apparatus according to claim 8, wherein the coil unit is fixed to the two side surfaces of a lens holder extending in parallel with a tracking direction.

Claim 24 (Currently Amended): An objective lens drive apparatus used in an optical pickup for detecting an inclination of an optical disk to adjust the inclination of an objective lens in accordance with an inclination signal of the optical disk, comprising:

a magnetic circuit including a magnet magnetized in at least three polarities portions;
and
a coil unit including a focus coil, a tracking coil and a tilt coil,

wherein the focus coil, the tracking coil and the tilt coil are disposed within a magnetic gap of the magnetic circuit,

wherein a focus servo is executed by supplying currents respectively to a plurality of the focus coils due to a sum of drive forces generated in the plurality of focus coils,

wherein the inclination adjustment of the objective lens is executed by generating moment around a center of gravity of a movable part due to a difference between the drive forces.

Claims 25-29 (Canceled)

Claim 30 (Previously Presented): An objective lens drive apparatus according to claim 24, wherein the magnetic circuit includes a plurality of magnets, and the coil unit is disposed within the magnetic gap formed by the magnets.

Claim 31 (Withdrawn): An objective lens drive apparatus according to claim 24, wherein the coil unit includes a plurality of printed circuit boards, and the focus coil and the tracking coil are separately mounted on at least one of the printed circuit boards.

Claim 32 (Previously Presented): An objective lens drive apparatus according to claim 24, wherein the coil unit includes a printed circuit board, and the focus coil and the tracking coil are mounted on the printed circuit board.

Claim 33 (Currently Amended): An objective lens drive apparatus used in an optical pickup for detecting an inclination of an optical disk to adjust the inclination of an objective lens in accordance with an inclination signal of the optical disk, comprising:

a magnetic circuit including a magnet magnetized in at least three polarities portions;
and
a coil unit including a focus coil, a tracking coil and a tilt coil,
wherein the focus coil, the tracking coil and the tilt coil are disposed within a magnetic gap of the magnetic circuit,
wherein a tracking servo is executed by supplying currents respectively to a plurality of the tracking coils due to a sum of drive forces generated in the plurality of focus coils,
wherein the inclination adjustment of the objective lens is executed by generating moment around a center of gravity of a movable part due to a difference between the drive forces.

Claims 34-37 (Canceled)

Claim 38 (Previously Presented): An objective lens drive apparatus according to claim 33, wherein the magnetic circuit includes a plurality of magnets, and the coil unit is disposed within the magnetic gap formed by the magnet gaps.

Claim 39 (Withdrawn): An objective lens drive apparatus according to claim 33, wherein the coil unit includes a plurality of printed circuit boards, and the focus coil and the tracking coil are separately mounted on at least one of the printed circuit boards.

Claim 40 (Previously Presented): An objective lens drive apparatus according to claim 33, wherein the coil unit includes a plurality of a printed circuit board, and the focus coil and the tracking coil are mounted on the printed circuit board.

Claim 41 (Currently Amended): An objective lens drive apparatus used in an optical pickup for detecting an inclination of an optical disk to adjust the inclination of an objective lens in accordance with an inclination signal of the optical disk, comprising:

two magnetic circuits respectively including a magnet magnetized in at least three polarities portions; and

a coil unit including a focus coil, a tracking coil and a tilt coil,
wherein the focus coil, the tracking coil and the tilt coil are disposed within a magnetic gap of the magnetic circuit,

wherein a focus servo is executed by supplying currents respectively to a plurality of the focus coils due to a sum of drive forces generated in the plurality of focus coils,

wherein the inclination adjustment of the objective lens is executed by generating moment around a center of gravity of a movable part due to a difference between the drive forces.

Claims 42-46 (Canceled)

Claim 47 (Previously Presented): An objective lens drive apparatus according to claim 41, wherein the magnetic circuit includes a plurality of magnets, and the coil unit is disposed within the magnetic gap formed by the magnets.

Claim 48 (Withdrawn): An objective lens drive apparatus according to claim 41, wherein the coil unit includes a plurality of printed circuit boards, and the focus coil and the tracking coil are separately mounted on at least one of the printed circuit boards.

Claim 49 (Previously Presented): An objective lens drive apparatus according to claim 41, wherein the coil unit includes a printed circuit board, and the focus coil and the tracking coil are mounted on the printed circuit board.

Claim 50 (Currently Amended): An objective lens drive apparatus used in an optical pickup for detecting an inclination of an optical disk to adjust the inclination of an objective lens in accordance with an inclination signal of the optical disk, comprising:

two magnetic circuits respectively including a magnet magnetized in at least three polarities portions; and

a coil unit including a focus coil, a tracking coil and a tilt coil,

wherein the focus coil, the tracking coil and the tilt coil are disposed within a magnetic gap of the magnetic circuit,

wherein a tracking servo is executed by supplying currents respectively to a plurality of the tracking coils due to a sum of drive forces generated in the plurality of focus coils,

wherein the inclination adjustment of the objective lens is executed by generating moment around a center of gravity of a movable part due to a difference between the drive forces.

Claims 51-54 (Canceled)

Claim 55 (Previously Presented): An objective lens drive apparatus according to claim 50, wherein the magnetic circuit includes a plurality of magnets, and the coil unit is disposed within the magnetic gap formed by the magnet gaps.

Claim 56 (Withdrawn): An objective lens drive apparatus according to claim 50, wherein the coil unit includes a plurality of printed circuit boards, and the focus coil and the tracking coil are separately mounted on at least one of the printed circuit boards.

Claim 57 (Previously Presented): An objective lens drive apparatus according to claim 50, wherein the coil unit includes a printed circuit board, and the focus coil and the tracking coil are mounted on the printed circuit board.